



SECTION ONE

# BACKGROUND



Upper Newport Bay Regional Park  
Photo courtesy of EIP Associates

## A. Introduction

WHEREVER YOU ARE ON EARTH, you are in a watershed. Practically speaking, the watershed is the most useful unit for land use management and conservation actions of all sorts: it follows the way nature organizes and divides the landscape. Beyond that, finding your watershed, even in an urban environment, seems to be a very good pathway to deeper understanding of your place in the world and where it is you call home. The more you study watersheds, the more you see the many ways that life and the land are related.

—Christopher M. Richard and Janet M. Sowers  
*California Coast and Ocean, Spring 1997*

### What Is the Santa Ana Watershed Project Authority’s Focus?

The Santa Ana Watershed Project Authority (SAWPA) was founded in 1974 as a Joint Powers Authority focusing on water supply and water

quality. The agency subsequently expanded its focus to include habitat restoration and enhancement. SAWPA recognizes that an investment in green infrastructure is crucial to the protection of water supply and water quality. A primary catalyst behind SAWPA’s efforts was Proposition 13, also known as the Costa-Machado Water Act of 2000. Proposition 13 included the Southern California Integrated Watershed Program (SCIWP) (California Water Code Sections 79104.20 through 79104.34), which provided \$235 million for local assistance grants to be administered by SAWPA. This funding, which was contingent upon appropriation by the State Legislature to the State Water Resources Control Board (SWRCB), was to be spent on projects to rehabilitate and improve the Santa Ana Watershed.



South Fork of the Santa Ana River  
 Photo courtesy of SAWPA

one expands outward from a planner’s geographic area of expertise, his or her knowledge grows less certain about projects and important issues. Given the large geographic area of the Santa Ana Watershed, few understand the entire system. This document is meant to provide a snapshot of projects watershed-wide by identifying as many projects as possible relating to wetlands, recreation, trails, open space, invasive species removal, habitat restoration, and education.

## Why Is SAWPA Doing This Plan?

It is generally recognized by watershed participants that there are many impressive projects underway or under development within the Santa Ana Watershed. However, while most project proponents are very familiar with their local planning area, very few groups or individuals within the Watershed understand or are aware of the myriad projects underway throughout the entire watershed. In general, as



Bolsa Chica Ecological Reserve Park  
 Photo courtesy of EIP Associates



Prado Wetlands  
 Photo courtesy of SAWPA





The SAWPA Commission allocated \$30 million of the aforementioned \$235 million into an environmental/habitat fund to be spent on removal of invasive species such as *Arundo donax*, habitat restoration, and native and treatment wetlands. A major component of the SCIWP is habitat restoration through the removal of invasive plant species; accordingly, the SAWPA Commission allocated \$20 million of the environmental/habitat fund to the Santa Ana Watershed Arundo Removal Program. SAWPA plans to use this Environmental and Wetland Component of the Integrated Watershed Plan as a basis to allocate the remaining funding million in the environmental/habitat fund of the SCIWP. This funding, up to \$10 million, will finance habitat restoration projects that specifically do not serve as mitigation for any other development projects.

The Santa Ana Integrated Watershed Plan, Environmental and Wetlands Component will serve four primary functions. First, it will serve as a tool for the SAWPA Commission to allocate up to \$10 million in SCIWP funding noted above. Second, the plan identifies future funding needs for green infrastructure. Third, the plan will help identify partnering opportunities throughout the Watershed to facilitate completion of good projects for the Watershed. Fourth, the plan will serve as a platform for watershed-wide planning, and would allow readers and users to make connections with other project proponents. Within a few years, the goal is that planners and other watershed participants will recognize that the plan is out of date due to the number of new projects, partners, and funding opportunities that should be included. The 2002 Santa Ana Integrated Watershed Plan, Environmental and Wetlands Component is not intended to be a final document. Rather, this plan will be a living document to adapt and update over time.



Watershed participants provided input during a series of four scoping meetings. Shown here: Scoping Meeting Three at Citrus State Historic Park. Photo courtesy of EIP Associates

SAWPA and their consultants hosted a series of four scoping meetings in July and August 2002 to determine the scope of the plan and to facilitate the gathering of “green” watershed projects. Over 350 watershed participants were invited to the meetings including SAWPA member agencies, regulatory agencies, nongovernmental organizations, watershed citizens, cities, counties, and special districts. Refer to Appendix A for meeting notes and attendance lists.



During scoping meetings, attendees participated in facilitated small group sessions. Photo courtesy of EIP Associates



The scoping meetings were very successful and garnered much interest in the Environmental and Wetland Component of the IWP. Participants presented projects and the purpose of their organizations to the large group. Meeting attendees completed SCIWP forms for project information and project information forms for those projects in need of further planning and/or future funding. Participants broke into small groups with a facilitator to discuss and identify important ideas. Small groups answered questions such as the following:

- Are there any missing components or topics you would like to see addressed in this plan?
- Are you aware of any key resource conservation areas (geographic locations) that we should identify in the plan?
- What do you see as the benefits of this plan (e.g., collaboration/funding partners/specific improvements to the Watershed...)?
- What obstacles do you face in implementing good watershed projects such as trails, parks, habitat restoration, wetlands, open space acquisitions, (e.g., lack of funding, need for more partners, communication, etc.)?

The input gathered from over 150 participants helped shape the Santa Ana Integrated Watershed Plan, Environmental and Wetlands Component. Many participants felt that meetings should continue on a more regular basis to provide a means by which environmental resources and future projects could be addressed on a watershed-wide level.

## B. Historical Context

Sunday, March 20, 1774: At half past eight in the morning we set forth...keeping on our right a high, snow-covered mountain, which drains into the lake mentioned.... We came to a valley similar to that of San José, which likewise has a good river, to which was given the name of Santa Anna.

—Juan Batista De Anza, upon viewing the Santa Ana River and Valley  
(excerpt from his 1774 expedition journal)

### Introduction

Historically, the Watershed included approximately 3,900 miles of streams, both perennial and intermittent, that could support various aquatic resources, and only one natural freshwater lake of significant size, Lake Elsinore. The Santa Ana River and its tributaries would have been intermittent with little or no flow at some locations in the alluvial valleys during the summer and fall dry season, particularly during



Anza's expedition leaving Tubac. Detail of an oil painting by Cal Peters.  
Photo courtesy of the National Park Service

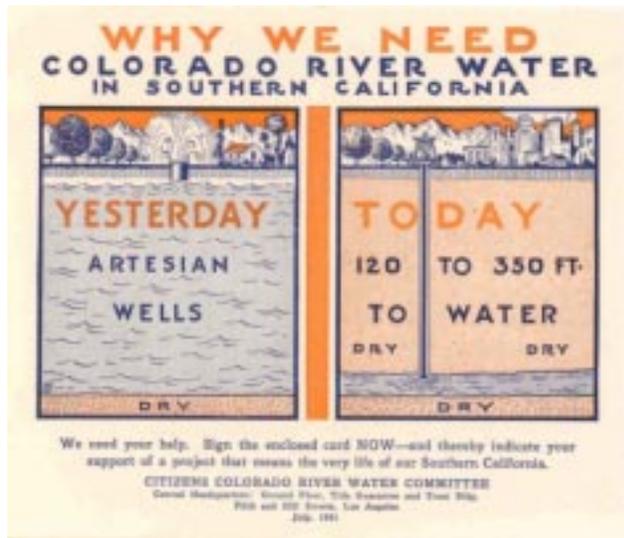


years with below average precipitation (USGS 1998). The consumptive demand for water for agricultural purposes and local domestic supply dates to the Spanish Mission Period in the Santa Ana River watershed. As early as 1820, Mill Creek was diverted into the Mill Creek Zanja by the Mission Fathers, to provide water to the tract of land that would later become known as Old San Bernardino.

Other early irrigation efforts involved settlers and farmers digging trenches and channels by hand to divert the natural flow of the River, constructing crude dams out of sand and brush. Since that time as consumptive demand increased for various purposes, so did the number of diversions from the Santa Ana River and its tributaries. Eventually, as the number of settlers increased, small-scale diversions overwhelmed the River’s flow and all of the surface flows were taken (SWRCB 1993). Diminishing surface flows have compounded

reduced surface flows prompted settlers and farmers to begin pumping groundwater to meet needs of agricultural operations.

As urbanization near watercourses increased, the demand for flood control measures to protect lives and property also increased, eventually leading to such large flood control facilities as Prado and Seven Oaks dams. Eventually, the strong agricultural-based economy was able to support the continuation of large-scale State and federal water importation projects such as the Colorado River Aqueduct, beginning the region’s reliance on imported water. Currently, water



Advertisement from 1931 explaining the need to build the Colorado River Aqueduct to bring water to Southern California.



Historic ad for a Corona citrus company.

agencies within the Santa Ana Watershed are working to reduce that dependence by “drought-proofing” the region. Weaning Southern California off of imported water during drought years will be no easy feat; drought-proofing involves storing enough water to withstand a major statewide drought cycle of up to three years without having to resort to water imports from elsewhere in California. Even as water has grown scarcer, urban growth has continued, heightening the challenge for water resource planners in the coming years.

problems for the region’s groundwater. As surface flows ebbed, groundwater recharge decreased due to a reduction in available water and opportunities for percolation. Concurrently,



## Natural History

Sunday, December 31, 1775: In the first and second range of hills and their canyons, which are of moist earth, I saw a great abundance of rosemary and other fragrant plants, and in the second long canyon many sunflowers in bloom, and grapevines and wild grapes of such good stock that it looked like a vineyard.

The Santa Ana River is a stream with plentiful water and a very deep channel...it is so deep that it has very few and difficult fords because of the rapidity with which the water runs...The waters of the River are very crystalline and beautiful. It arises in the Sierra Nevada, and runs from northeast to southwest with some variation and declination to the west, until it reaches the sea, and most of the way it runs boxed in between hills.

—Excerpt from Journal of Father Font describing the Santa Ana River and Valley



South Fork of the Santa Ana River  
Photo courtesy of United States Geological Survey

The natural consequence of the consumptive use of water described above was that much less water was available to fish and other aquatic resources, and the quality of the water remaining was reduced. The physical diversion of water from a stream, even temporarily, and the need for flood control, usually included the building of a dam completely or partially across a stream. The physical blocking of the stream, coupled

with the withdrawal of water has resulted in one or more of the following effects on aquatic resources of the Santa Ana River watershed (Moyle 2002):

- Blocking or altering local movements and migrations of aquatic resources;
- Alterations of water temperatures and flow patterns;
- Entrainment of aquatic resources into diversion facilities and canals;
- Creation of reservoirs that favor exotic species;
- Altering upstream stream reaches; and
- Altering downstream estuaries.

These effects have dramatically altered ecosystem function of the Santa Ana Watershed and have changed species composition. Refer to Appendix F for a listing of sensitive species potentially occurring within the Santa Ana Watershed. This includes State and federal endangered, threatened, and rare species listed in the California Department of Fish and Game’s Natural Diversity Database as of July 2002.



Chino Hills  
Photo courtesy of SAWPA

<sup>1</sup> Also cited as the Pacific brook lamprey (*Lampetra pacifica*).

<sup>2</sup> Anadromous = fish species that move from the ocean to freshwater to reproduce and whose offspring return from freshwater to the ocean to rear to reproductive age.



Table 1-1 Fishes Historically Present in the Santa Ana Watershed

Fishes Historically present in the Santa Ana Watershed	
<b>PETROMYZONTIDAE</b> (lamprey family)	<ul style="list-style-type: none"> <li>Western brook lamprey (<i>Lampetra</i> cf. <i>richardsoni</i>)<sup>1</sup></li> <li>Pacific lamprey (<i>Lampetra tridentata</i>)</li> </ul>
<b>SALMONIDAE</b> (salmon and trout family)	<ul style="list-style-type: none"> <li>Rainbow trout (resident form of <i>Oncorhynchus mykiss irideus</i>)</li> <li>Steelhead (anadromous<sup>2</sup> form of <i>Oncorhynchus mykiss irideus</i>)</li> </ul>
<b>CYPRINIDAE</b> (minnow family)	<ul style="list-style-type: none"> <li>Arroyo chub (<i>Gila ocutti</i>)</li> <li>Santa Ana speckled dace (<i>Rhinichthys osculus</i> ssp.)</li> </ul>
<b>CATOSTOMIDAE</b> (sucker family)	<ul style="list-style-type: none"> <li>Santa Ana sucker (<i>Catostomus santaanae</i>)</li> </ul>
<b>FUNDULIDAE</b> (killifish family)	<ul style="list-style-type: none"> <li>California killifish (<i>Fundulus parvipinnis</i>)</li> </ul>
<b>GASTEROSTEIDAE</b> (stickleback family)	<ul style="list-style-type: none"> <li>Partially armored threespine stickleback (<i>Gasterosteus aculeatus microcephalus</i>)</li> <li>Unarmored threespine stickleback (<i>Gasterosteus aculeatus williamsoni</i>)</li> <li>Shay Creek threespine stickleback (<i>Gasterosteus aculeatus</i> ssp.)</li> </ul>

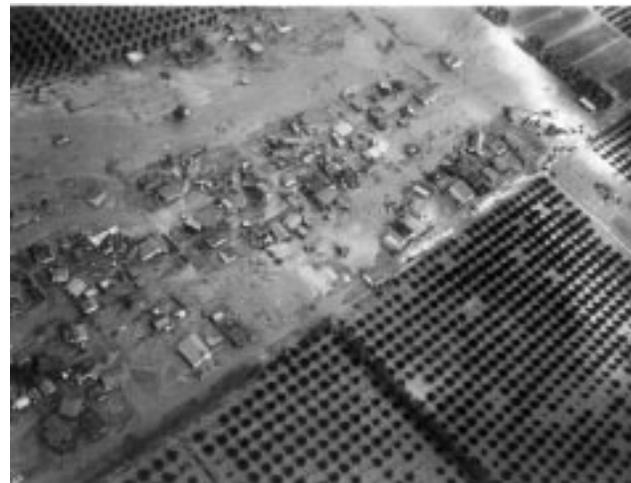
Historically, the Santa Ana River contained a limited fish fauna of only eight species of native freshwater fishes (refer to Table 1-1). Of these eight, the rainbow trout had a resident form and an anadromous<sup>1</sup> form (called steelhead). The threespine stickleback is believed to have had three forms as listed in Table 1-1.

The Santa Ana River has historically provided habitat for many amphibian species including the arroyo toad (*Bufo californicus*), the western toad (*Bufo boreas*), the southwestern toad (*Bufo microscaphus*), the coast range newt (*Taricha torosa torosa*), the Arboreal salamander (*Aneides lugubris*), the Pacific slender salamander

<sup>1</sup> Also cited as the Pacific brook lamprey (*Lampetra pacifica*).

<sup>2</sup> Anadromous = fish species that move from the ocean to freshwater to reproduce and whose offspring return from freshwater to the ocean to rear to reproductive age.

(*Batrachoseps pacificus*), the black-bellied slender salamander (*Barachoseps nigriiventris*), the large-blotched salamander (*Ensatina eschscholtzi klauberi*), the California-red-legged frog (*Rana aurora draytonii*), the mountain yellow-legged frog (*Rana muscosa*), the western spadefoot (*Scaphiopus hammondi*), the California treefrog (*Hyla cadaverina*), and the Pacific chorus frog (*Pseudoeacris regalia*). Many of these amphibians are highly specialized and adapted to the unique hydrologic conditions intermittently present in Southern California and the Santa Ana Watershed. Historic flood events caused by precipitation in the high mountains, allowed for



Loss of property from historical flooding events, such as the homes and agricultural land shown here in the 1938 flood, prompted dam construction. Photo courtesy of California Coastal Conservancy

the development of breeding and overwintering habitats, which many of the amphibian species have adapted to utilize. Dam construction and changes in land use patterns in the last 70 years have altered the hydrologic patterns in the Santa Ana River watershed, and have changed the habitats used by these native amphibian species.

With respect to reptiles, the Santa Ana river system has provided habitat for several types of aquatic and semi-aquatic species including the southwestern pond turtle (*Clemmys marmorata Pallenscens*), the south coast garter snake



(*Thamnophis sirtalis* ssp.), the two-striped garter snake (*Thamnophis hammondi*), the western aquatic garter snake (*Thamnophis couchi*), and the mountain garter snake (*Thamnophis elegans elegans*). None of these species is protected under



The Santa Ana Watershed continues to provide habitat for a wide range of bird species, including the bald eagle, which frequents the Big Bear Mountains. Photo courtesy of U.S. Fish and Wildlife Service.

the Endangered Species Act; however, many of them are California Department of Fish and Game species of “Special Concern.”

Historically, the Santa Ana Watershed provided habitat to a large range of riparian bird species. Three of these species are now federally threatened or endangered: the least Bell’s vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii*), and bald eagle (*Haliaeetus leucocephalus*). Grinnell and Miller (1944) characterized the least Bell’s vireo as one of the most common riparian birds throughout the state. Likewise, all three resident subspecies of the willow flycatcher were once considered widely distributed and common within California wherever suitable habitat existed. Unitt (1987) concluded that the southwestern willow flycatcher was once fairly common in the Los Angeles basin, the San Bernardino/Riverside area, and San Diego County.



## HISTORY OF WATERSHED SETTLEMENT

### Santa Ana River Timeline

10,000 B.C.  
1768 A.D.



**10,000 B.C.-1768 A.D. Native American Period:** Native Americans have inhabited the Santa Ana Watershed for at least 12,000 years- perhaps longer- based on artifacts in the Calico area (San Bernardino). Native Americans used the Santa Ana River as a source of food and water, and did not raise crops or practice agriculture or irrigation. Within the past 3,000 years, the Serranos occupied the foothills of the San Bernardino Mountains, the Gabrielenos lived in the West Valley, and the Luisenos occupied an area south of Mt. San Jacinto.

1769-1833

**1769-1833 Mission Period:** European settlement of watershed began, centered around conversion of Native Americans to Christianity. The Spanish brought knowledge of aqueducts to California, introducing the practice of irrigation to the State.

Notable Dates within the Mission Period:

1769

**July 1769:** The first party of European explorers reached boundaries of present day Orange County. Members of the expedition named the region "The Valley of Saint Anne" (Santa Ana).

1772

**1772:** Captain Pedro Fages, military *comandante* of the Spanish Alta California, became the first European known to set eyes upon the San Bernardino Mountains.

1776

**January 1, 1776:** The first party of colonists to come overland to the Pacific Coast crossed the Santa Ana River. Led by Lt. Col. Juan Bautista de Anza, the group of 242 men, women, and children camped near the River. The group reportedly proceeded north to found the City of San Francisco.

1834-1850

**1834-1850's Rancho Period:** Large portions of land were settled by private ranchers. Floodplain development began in Santa Ana Watershed. Settlers began diverting water from the Santa Ana River for irrigation of gardens. The City of Santa Ana was founded.



1850

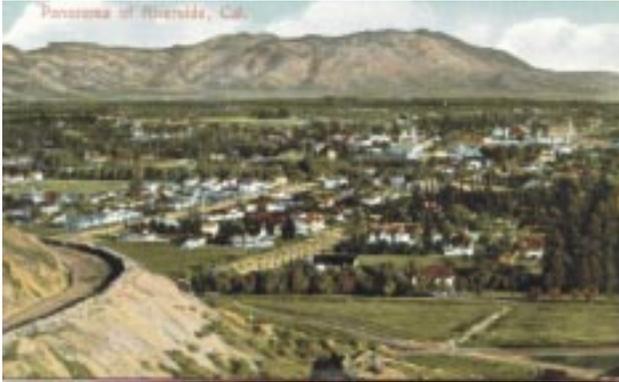
**1850's Pioneer Settlers:** Mormon colonists settled near Mill Creek, establishing agricultural and logging operations and founding the City of San Bernardino in 1854. Settlers diverted water from Mill, Lytle, and Warm Creeks. Water was diverted from Santa Ana River for domestic use by a colony later to become Anaheim.

Sources:

*Santa Ana Watershed Profile*, California Coastal Conservancy, <http://eureka.regis.berkeley.edu.wrpinfo/>  
*Santa Ana River Basin Plan*, 1995. State Water Resources Control Board.



<p><b>1862:</b> The catastrophic flood of 1862 caused over 4 feet of water to flood Anaheim, killing 200,000 cattle and altering the course of the Santa Ana River from a well-defined course to a fan of several channels.</p>	<p>1862</p>
<p><b>1873:</b> The U.S. Department of Agriculture sent two small navel orange trees to Riverside resident Eliza Tibbets. Those trees, growing in near perfect soil and weather conditions, produced an especially sweet and flavorful fruit...and changed the history of southern California.</p>	<p>1873</p>
<div data-bbox="337 604 808 932" data-label="Image"> </div> <p><b>1881:</b> Completion of railroad lines by Southern Pacific and Santa Fe companies increased opportunities for migration to California, causing an increase in population and increasing the need for further irrigation.</p>	<p>1881</p>
<div data-bbox="451 968 711 1199" data-label="Image"> </div> <p><b>Late 1800's to early 1900's:</b> Efforts to promote citrus ranching brought hundreds of would-be citrus barons to southern California for the "second Gold Rush." In 1889, Orange County was carved from Los Angeles County, named for its famous citrus groves. By 1895, Riverside, fueled by citrus money, became the wealthiest city in the nation per capita.</p>	<p>1800-1900</p>
<p><b>1938-1941:</b> The great flood of 1938 claimed 50 lives and caused a great deal of damage within the Watershed, particularly to the City of Riverside. In response to the flood, the Army Corps of Engineers completed Prado Dam in 1941. The construction of Prado Dam allowed for more urbanization within the flood plain.</p>	<p>1938-1941</p>
<div data-bbox="310 1472 716 1829" data-label="Image"> </div> <p><b>1969:</b> The most recent major flood of the Santa Ana River claimed five lives and an estimated \$30 million in property damage.</p>	<p>1969</p>
<p><b>1969- present.</b> River has become effluent dominated, with most dry weather flow between the mountains and Prado Dam diverted for consumptive uses or decreased due to groundwater pumping. As Watershed population has increased, so has wastewater flow and therefore river flow. Water quality is steadily improving due to improved technology, regulation, and planning.</p>	<p>1969- PRESENT</p>



Historic view of the City of Riverside  
 Photo courtesy of USGenNet

## Planning History

The Santa Ana Watershed is renowned for its innovative solutions to water supply and water quality dilemmas, particularly through unique partnerships. Indeed, during the early 1970s, the Santa Ana Watershed was considered to have one of the most comprehensive watershed planning documents in the world. However, many relationships between current watershed partners have not always been so harmonious. Prior to 1969, water use and rights within the Santa Ana Watershed were subject to much litigation and strife. Water quantity was the primary concern of early conflicts and the issue was resolved by legal judgments.

### Water Wars

Litigation over water rights within the Watershed began as early as 1932, when Orange County ranchers represented by Orange County Water District (OCWD) initiated legal action against upstream interests. A series of lawsuits followed; however, a satisfactory resolution was not reached until 1969. The Santa Ana Stipulated Judgment provided a physical solution to water use conflict: water users in the Orange County area have rights, as against all upper basin users, to receive a minimum average supply base flow at Prado, in addition to all storm flow reaching

Prado Dam. Almost 40 years in the making, this solution was exceptional because it guaranteed a minimum flow to downstream users instead of limiting the consumption of upstream water users.



SAWPA representatives at the annual Santa Ana River Symposium, April 2002  
 Photo courtesy of EIP Associates

### SAWPA Formation

As a result of the litigation and stipulated judgment to ensure the supply of good quality water to Orange County, the Chino Basin Municipal Water District (CBMWD), Western Municipal Water District (WMWD), San Bernardino Valley Municipal Water District (SBVMWD), and Orange County Water District (OCWD) determined that planning the use of water supplies in the Watershed would be beneficial to all water users. The Santa Ana Watershed Project Authority (SAWPA) was formed in 1974 as a joint exercise of powers authority. SAWPA's original members were the four water districts, CBMWD, WMWD, SBVMWD, and OCWD, since they have the primary responsibility of managing, preserving, and protecting groundwater supplies in the Santa Ana Basin. Eastern Municipal Water District (EMWD) joined as SAWPA's fifth member agency in 1984. The Chino Basin Municipal Water District is now known as Inland Empire Utilities Agency (IEUA).



Originally, the primary concern of watershed agencies was water quantity. As each member agency looked toward the future, they realized that water quantity was not the only issue of concern within the Watershed; declining water quality posed a threat that no district could handle alone. The districts suspected that declining water quality could pose a greater danger than overdraft and that without planning and project implementation to control the problem, the gradual accumulation of pollution in the basin could cause a total devaluation of area water supplies. In the early 1970s, the Regional Water Quality Control Board contracted with SAWPA to develop the Basin Plan for the Santa Ana Watershed (RWQCB 1993). This long-range plan included both regulatory programs and projects. The regulatory portion was recommended to the Regional Water Quality Control Board and was largely adopted by that agency in the form of standards. At the time, the Basin Plan for the Santa Ana River was considered the most comprehensive water quality protection program of any river basin in the world, largely due to the active, ongoing interest and participation by the member water districts. Beginning in the 1970s, SAWPA constructed the Santa Ana Regional Interceptor (SARI) to transport brine from inland areas to the Pacific Ocean, improving River water quality.



Many environmental organizations were showcased at the annual CSUSB Environmental Expo.

*Photo courtesy of EIP Associates*

### Tri-County Conservation League's Origin

In the early 1960s the League of Women Voters of Riverside conducted a study of the Santa Ana River environment identifying its purpose and mission, and found that the river should be saved in its wild state. This finding was in total opposition to the over 400 local, State and federal studies which all determined the river had little or no worth economically. The Army Corps had plans already drawn up to concrete the river bottom for flood control as they had done to the Los Angeles River. This was not a new phenomenon, as indeed, other rivers in southern California were also subject to similar proposals.

However, some members of the community were strongly opposed to the idea of losing the natural functions of the Santa Ana River to flood control and utility purposes. In 1966, three League women by the name of Ruth Bratten (now Ruth Anderson Wilson), Martha McLean (now deceased), and Kay Black, formed an environmental conservation group called the Tri-County Conservation League to fight for preservation of the Santa Ana River.

“Keep the river with its soft bottom for recreational use when it is not in flood conditions. Let the natural effects of flooding be accommodated so it can bring new soil and new seeds that create young forage for wild life. Widened banks slow the speed of floodwaters letting the silt be deposited. Keep the water here in the river to refill our underground water reservoirs.”

—Ruth Anderson Wilson  
*Tri-County Conservation League's Primary Message*



The three women attended City and County hearings regularly, made presentations to many interest groups, and quickly gained the original support of 78 community groups who also believed the River should stay natural. The Riverside County Board of Supervisors and their Flood Control Districts were often at odds with these vocal women who then continued to build a throng of more supporters in favor of saving the River with the help of the local newspaper. By 1970, the Tri-County Conservation League had become the leading environmental organization in Riverside County.

With the help of Pete Dangermond, then Riverside County Parks Director, the drift in the political tides began to change in favor of wildlands conservation. Saving of the river followed. Small victories for public law reinforced the validity of the Tri-County Conservation League as an organization representing the public's interest.

In the words of Ruth Anderson Wilson, "... This was a time of women coming out into their own... It was reflective of a changing society. I don't know if this could have happened in another era." As a result of the Tri-County Conservation League's work in combating the proposed concrete channelization of the Santa Ana River as well as the successful relocation of proposed primary utility lines, the River remains natural to this day from Barton Flats in San Bernardino County, through Riverside County to the ocean in Orange County. It is almost entirely in public ownership now and is available for hiking, horseback riding, camping, and other recreational uses when the river is not in flood, realizing the dreams of the three "housewives" in the mid-1960s.

The natural condition of the River also had a positive effect on how the Counties of San

Bernardino and Orange viewed potential recreational uses of the River. The volunteers of the Tri-County Conservation League continue to be dedicated the role of "watchdog" of the River. The organization's bylaws have acted as a model for many environmental organizations that have followed after them. The Santa Ana River's status as a primarily wild river is due largely to the efforts of the Tri-County Conservation League members and the supporting public.

During the last three decades, conservation based nonprofit groups and other organizations active in the Santa Ana Watershed, such as the Santa Ana River Watershed Group, Sierra Club, Riverside Lands Conservancy, Audubon Society, The Nature Conservancy, Trails 4 All, San Timoteo Badlands Coalition, Surfrider Foundation, and Wildlands Conservancy have taken a more active role in land use and water resource planning. These groups continue to have a strong voice within the Watershed today, and serve as the project proponent for many beneficial habitat restoration and land acquisition projects.

### **Southern California Integrated Watershed Program**

A gradual and steady shift has been occurring within the Santa Ana Watershed whereby member and other agencies are focusing upon habitat conservation and endangered species in tandem with water quality and quantity. Indeed, today efforts are underway to form a foundation, based on a coalition of community leaders interested in the long term sustainability of the watershed: the Santa Ana Watershed Coalition. The year 2000 marked another landmark in Watershed history. Proposition 13, approved by the electorate of the State of California on March 7, 2000, contained the Southern California Integrated Watershed Program (SCIWP),



providing \$235 million for local assistance grants. Upon appropriation by the State Legislature to the State Water Resources Control Board (SWRCB), the funding was allocated to the Santa Ana Watershed Project Authority (SAWPA) for projects to rehabilitate and improve the Santa Ana River Watershed. The Act specifically identified funding to the following types of projects:

1. Basin water banking
2. Contaminant and salt removal through reclamation and desalting
3. Removal of nonnative plants, and the creation of new open space and wetlands
4. Programs for water conservation and efficiency, and storm water capture and management
5. Planning and implementation of a flood control program to protect agricultural operations and adjacent property, and to assist in abating the effects of waste discharges into waters of the State

SAWPA reviewed nearly 100 applications from agencies wishing to obtain Prop 13 funding. Both SAWPA and the State Board ultimately approved approximately twenty-five projects. The majority of these projects were for water supply and water quality improvements, with about \$30 million set aside for environmental and habitat enhancement projects. Of these monies, \$20 million will fund the SCIWP *Arundo* Removal Program and as much as \$10 million has been reserved for the SCIWP Environmental and Wetlands Program. Both the *Arundo* Removal Program and the Environmental and Wetlands Program are discussed later in this document.

Two years after the approval of Proposition 13, on March 5, 2002, a second bond was passed that will greatly aid conservation within the Santa

Ana Watershed. The \$2.6 billion Proposition 40, or “Park Bond,” will fund natural and historical resource protection, including land acquisition for conservation. Proposition 40 funding, which was recently undergoing appropriation at the state level, could fund millions in projects to benefit the Santa Ana Watershed. This funding may supplement the Proposition 13 funding to serve as an excellent basis to support and finance the projects identified in the Environmental and Wetlands Component of the Santa Ana Integrated Watershed Plan. In addition, Proposition 50, which passed on the Fall 2002 ballot, contains funding that should again fund the integrated watershed planning projects in the Santa Ana Watershed.

## C. Planning Context

### Message to the Planning Community

There has never been a better time than the present to welcome the planning community, including both public and private sector planners, to the table to advance the benefits of planning on a watershed scale and integrating watershed thinking into the everyday planning process. Bringing together varied interests and agendas, this watershed planning process has opened the doors to still greater partnerships, funding opportunities, connectivity, and increased awareness of planning projects and opportunities both in the city next door and in the community on the other side of the Watershed. This plan does not attempt to address all watershed planning issues and concerns, nor will it fit together all existing plans and policies. Rather, the intent of this discussion is to capture a glimpse of many of these existing plans and policies as possible. Most importantly, the goal is to bring important messages from these



documents home to the Santa Ana Watershed in terms of relevant needs within the planning community.

As many cities and counties are in the process of updating their General Plans, funding opportunities and greater collaboration between water agencies, nongovernmental organizations, and local land use authorities are facilitating beneficial projects such as conservation, open space, restoration, enhancement, connectivity, and multi-benefit approaches. In this way, planners are finding themselves in a new place—one of noting the quality of these projects and how to get them through the regulatory planning process with more agreement and greater speed. Refer to Table 1-2 for a listing of applicable plans and policies.

State law is helpful. Conservation, Safety, Open Space and Land Use Elements are required elements of every General Plan in the State of California. These Elements provide essential components of good watershed plans.

Newly proposed Fire Hazard Planning,<sup>1</sup> as well as the more traditional floodplain management guidelines for preparation of General Plans,<sup>2</sup> includes helpful explanations and instructions for planners trying to make sense of how watershed planning can be and should be integrated into General Plan Updates.

“Floodplain management may be approached as a stand alone program or as one component of the broader notion of watershed planning, which also includes objectives such as improved water quality, erosion control, flood management and habitat conservation and enhancement. Where possible, a community should take a broader watershed approach to floodplain management, which would result in a coordinated regional approach to land use planning and flood loss reductions. When incorporated into the general plan, either as an optional element or as a section in the land use, open-space, conservation, or safety element, floodplain management principles will be reflected as long-term development policies.

Land use decisions directly influence the function of floodplains and may either reduce or increase potential flood hazards. The functions of floodplains include, but are not limited to, water supply, improved water quality, flood and erosion control, and fish and wildlife habitat.”

### Statewide Planning

The Resources Agency of the State of California is in the process of developing statewide watershed planning guidelines. The California Resources Agency, in conjunction with the SWRCB, recently issued a draft report for the State Legislature titled “Addressing the Need to Protect California’s Watersheds: Working with Local Partnerships,” available for downloading at <http://resources.ca.gov/watershedtaskforce/>. The first recommendation to come out of this report was the development of statewide

<sup>1</sup> The Office of Planning and Research in conjunction with the California Department of Forestry and Fire Protection, Governor’s Office of Emergency Services, Regional Council of Rural Counties, and the California State Association of Counties has developed a publication entitled Hazard Mitigation: Fire Hazard Planning and the General Plan and has posted it here for public review and comment. This publication was designed as a “planning tool” to help concerned citizens, Fire Safe Councils, planning professionals, and other interested parties develop local fire plans which can easily be incorporated into a city’s or county’s General Plan. <http://www.opr.ca.gov/publications/PDFs/HazardMitigation.pdf>

<sup>2</sup> General Plan Guidelines, STATE OF CALIFORNIA GOVERNOR’S OFFICE OF PLANNING AND RESEARCH, APPENDIX C, Floodplain Management, <http://www.fpm.water.ca.gov/generalplan.html>.



watershed policy, including the establishment of a single set of overall principles, policies, and flexible guidelines for watershed management. It is unlikely that these policies will be adopted prior to the completion of this document. Therefore, future iterations of the Santa Ana Integrated Watershed Plan should consider statewide watershed planning policies.

With authority granted through the California Water Code and the Clean Water Act, the State Water Resources Control Board (SWRCB) and the nine regional Water Quality Control Boards (RWQCBs) are responsible for the protection and enhancement of California's water quality. The SWRCB sets statewide policy and works with the RWQCBs to implement State and federal laws and regulations. The Water Quality Control Plan for the Santa Ana River Basin (Basin Plan), adopted by the Santa Ana RWQCB, forms the basis for the Regional Board's regulatory programs. The Basin Plan, developed in 1975, was revised in 1983 and 1995, and is currently undergoing revision (2002). Most policies outlined in the Basin Plan are addressed in the Integrated Water Resources Plan rather than the Environmental and Wetlands Component of the Santa Ana Integrated Watershed Plan. The most serious problem in the basin is the buildup of dissolved salts in the groundwater and surface water, and associated adverse impacts.

### **Local and Regional Plans and Policies**

The Environmental and Wetlands Component of the Santa Ana Integrated Watershed Plan has been developed in accordance with other applicable local, State, and national plans and policies. On a fundamental level, the two most closely related plans are the Santa Ana Integrated Watershed Plan Water Resources Component and the Santa Ana Regional Interceptor Planning

Study. These two documents, both produced by SAWPA, address water quality and water supply issues within the Santa Ana Watershed.

General Plans for each of the Watershed's three major counties and 59 cities certainly form the cornerstones of policy development within the Watershed. The Orange County General Plan, San Bernardino County General Plan Update (undergoing revision soon), and Riverside County General Plan Update (Draft currently in public review) have each been reviewed during preparation for this document. One ultimate goal of the IWP is to allow watershed planning policies and goals a place in the general plans of local governments.

### **Riverside County Integrated Project**

The County of Riverside is taking an integrated approach to land use planning. Riverside County's "Blueprint for Tomorrow" includes an update to the General Plan, the Community and Environmental Transportation Acceptability Process (CETAP) and the Multi-Species Habitat Conservation Plan.

### **Western Riverside County Multispecies Habitat Conservation Plan**

In response to growing development pressures and a regional understanding of the need for coordinated conservation efforts, Riverside County is currently developing a Multispecies Habitat Conservation Plan (MSHCP). A draft was circulated in March 2002 (available for review at [www.rcip.org](http://www.rcip.org)), and a final version is expected in Fall 2002. The primary goal of the plan is to coordinate the conservation of approximately 510,000 acres of open space, in addition to coordinating special status species conservation efforts such as Santa Ana sucker



conservation. About 357,000 acres would be preserved on existing publicly owned lands, while 153,000 acres would be acquired from existing private landowners. The core area reserves include oak woodland habitat and 15,000 acres of coastal sage scrub. This acquisition of private lands has been analyzed throughout watershed plan preparation in order to coordinate watershed plan recommendations with MSHCP strategy. Refer to the Draft MSHCP, which identifies priority acquisition lands within Riverside County.

**Recommendation:** As projects are proposed through collaborative funding opportunities, watershed partners should utilize the MSHCP in making decisions regarding land acquisition areas within Riverside County.

### San Bernardino County General Plan Update

The County's General Plan will be updated to reflect the results of Phase I scoping which define the focus of the General Plan Update. Open space and conservation elements will be addressed with extensive public involvement to ensure that these essential elements address all significant issues.

**Recommendation:** Watershed participants should invest resources to ensure that watershed interests such as connectivity, trails, open space, biological diversity, water quality and supply, wetlands, are supported and included in the County of San Bernardino General Plan Update.

### San Bernardino Valleywide Multispecies Habitat Conservation Plan (MSHCP)

The San Bernardino Valley MSHCP encompasses approximately 500 square miles containing six unique habitat types, six State endangered species, thirteen federally endangered or threatened species, and over fifty-three species of special concern. Plan boundaries are the valley portions of western San Bernardino with the San Bernardino and San Gabriel mountains as the northerly and easterly boundaries, and the county boundary of Riverside, Orange, and Los Angeles counties to the south and west. The work has been primarily focused on biological data collection, using San Bernardino County Natural History Museum staff and their biologist to develop a habitat-based chronological inventory of resources. In addition, a subset of the planning effort has been compilation of a focused plan to adjust Delhi Sands flower-loving fly habitat. The County Board of Supervisors allocated seed money in early 2000, and thirteen of fifteen cities in the region joined in a Memorandum of Understanding (MOU) to prepare and help fund the MSHCP. The U.S. Fish and Wildlife Service is also participating in the planning effort. As the group is currently not funded, they are renegotiating with Fish & Wildlife Service regarding adequate funding and obtaining Board direction to proceed with the program.

Another planning effort underway is the Land Management and Habitat Conservation Plan for the Upper Santa Ana River Wash, directed by the San Bernardino Valley Water Conservation District in conjunction with two mining companies operating within the wash, the City of Highland and the City of Redlands. The planning boundaries are from Route 30 on the west to the Seven Oaks Dam in the Mill Creek



area on the east. The plan is promising and will be cooperatively funded, primarily through the Conservation District and the two mining companies. It will also address the potential conflict between mining activity and habitat preservation.

### **Orange County Central—Coastal NCCP Subregional Plan**

This Natural Communities Conservation Plan (NCCP), approved in July 1996, establishes a 37,380-acre reserve system that includes significant areas of twelve of Orange County's major habitat types covering thirty-nine sensitive plant and animal species.

### **Orange County Southern Subregion**

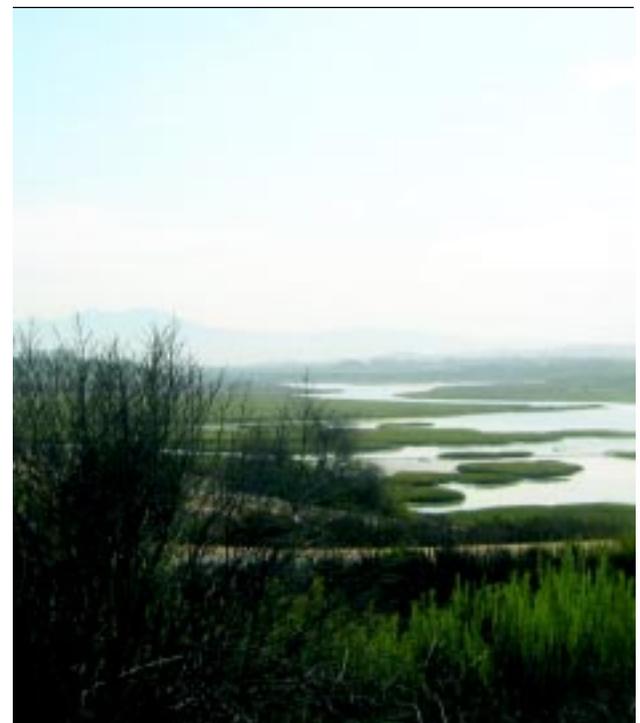
The County of Orange and major South County landowners are preparing a subregional preserve plan (NCCP/HCP) and special area management plan/master streambed alteration agreement that will integrate wetlands and endangered species permits for a 91,000-acre portion of southern Orange County. An update to the County's General Plan and Zoning Ordinance is also underway. Public workshops discussing alternatives to be addressed for planning efforts in southern Orange County have been completed.

### **Irvine Ranch Land Reserve**

The Irvine Ranch Land Reserve, totaling approximately 50,000 acres extends from the Cleveland National Forest to the shores of Crystal Cove State Park. The reserve lands, prized for their beauty and unique geological and natural diversity include the 5,500-acre Limestone Canyon and the "Sinks," a striking formation frequently compared to a miniature Grand Canyon, the San Joaquin Wildlife Sanctuary,

Irvine's Bommer and Upper Shady canyons, Quail Hill, and more than 7,000 acres of open space and coastal sage scrub at the Newport Coast. The Jeffrey Recreation Center will ultimately link the large open space reserves at Irvine's northern and southern boundaries.

Conservation opportunities build on existing open space in the General Plan, NCCP Reserve, and Cleveland National Forest.

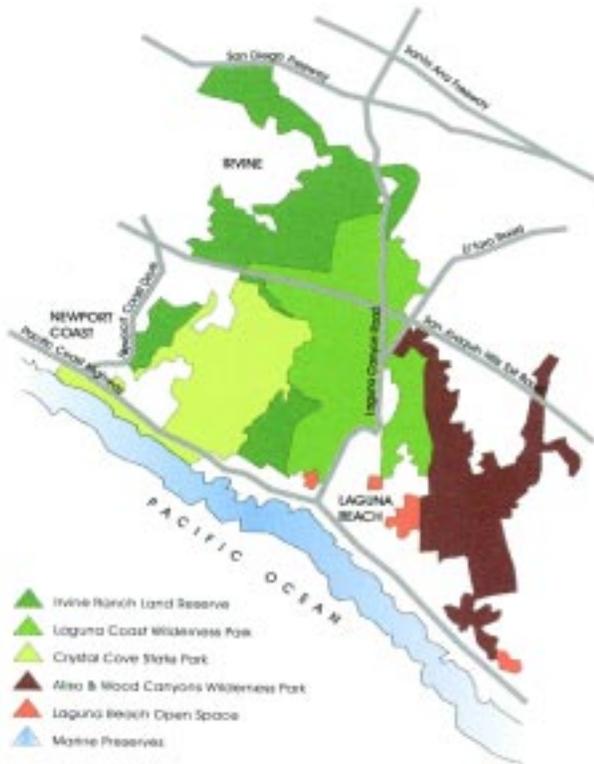


Orange County has been the focus of numerous natural resource planning efforts. Shown here: Upper Newport Bay Regional Park in Orange County.  
*Photo courtesy of EIP Associates*

At the headwaters of Laguna Canyon is a key linkage to the Irvine Ranch's giant Southern Open Space Reserve on Irvine's southern boundary. Laguna Laurel, as the 1,400-acre site is commonly known, also is a key linkage to Laguna Coast Wilderness Park, Crystal Cove State Park, and Aliso and Wood Canyons Wilderness Park.



Recommendation: Watershed stakeholders should continue to engage in watershed-wide (interjurisdictional) collaboration regarding connectivity, trails, and other watershed needs so that landscape linkages, public/private partnerships, acquisition, in-holdings, and public coastal access goals are realized in the County of Orange General Plan Update and related planning efforts.



Southern Ranch (Boundaries may have been altered)

### Endangered Species Recovery Plans

Applicable recovery plans for listed species within the Santa Ana Watershed have been reviewed for the preparation of the Santa Ana Integrated Watershed Plan, although most species do not have recovery plans. The Recovery Plan for the federally endangered Delhi Sands flower-loving fly, published by the USFWS in 1997, details the actions needed to de-list the species, including habitat preservation in several specific locations. A draft Conservation

Program for the federally threatened Santa Ana Sucker has been prepared and has been forwarded to the USFWS for approval.

### Santa Ana River Canyon Habitat Management Plan

The HMP has been prepared as a requirement of the Final Supplemental EIS on the Phase II General Design Memorandum for the U.S. Army Corps of Engineers Santa Ana River Mainstem Project. The HMP addresses the floodplain and open space wildlife habitat in Santa Ana Canyon below Prado Dam. The Plan provides for planning and management continuity for the canyon habitat from Prado Basin downstream to Weir Canyon Road.

### Environmental Assessment for the Santa Ana Watershed Program

The Environmental Assessment for the Santa Ana River Watershed Program, prepared by the Orange County Water District and the Santa Ana Watershed Association of Resource Conservation Districts in 2000, describes potential environmental effects from the Watershed Program during years 2000 through 2002. This document was prepared for an Environmental Protection Agency (EPA) Grant, and includes scientifically based information on watershed habitat, plant communities, species surveys, threatened and endangered species, and invasive species removal. This document serves as an important reference document for anyone requiring information about the biological resources of the Santa Ana River.

### Waterfowl-Raptor Conservation Area

The City of Ontario, in conjunction with development of the Ontario Sphere of Influence, plans a 145-acre Waterfowl-Raptor Conservation



Area (WRCA) off-site adjacent to the Prado Wetlands. Implementation of the project near the Prado Wetlands will increase effectiveness of the WRCA.

### Lake Elsinore & San Jacinto Watersheds Authority (LESJWA)

LESJWA has completed or is in the process of completing a number of studies, including the following:

- Lake Elsinore Feasibility Study
- Canyon Lake Feasibility Study
- Impacts of Alum Addition on Water Quality in Lake Elsinore
- Impacts of Calcium Addition on Water Quality in Lake Elsinore

- Laboratory and Limnocosm-Scale Evaluations of Restoration Alternatives for Lake Elsinore
- Restoration of Canyon Lake and Benefits to Lake Elsinore Downstream

LESJWA currently has underway a Program Environmental Impact Report, which examines recycled water, wetlands treatment, in-lake treatments, aeration/oxygenation, and biomanipulation projects. Also underway is an Environmental Impact Report that examines bio-manipulation and fishery enhancement, as well as in-lake treatments projects. The source of much of the lake quality degradation has been traced to contributions of nutrients from upper watershed runoff. Various types of nonpoint source contributors have been identified in detail as part of an EPA Clean Lakes 314 Study. Major contributors of nonpoint source contributions include agricultural cropland, dairies, feedlots, grazing, land development, and urban runoff. Solutions to controlling the nutrients carried by runoff and sediment are both structural and nonstructural in nature and are described as follows:

- Establish Best Management Practices program for agricultural areas
- Create buffer strips along strategic upper watershed locations
- Create detention ponds for dairy and feedlot drainage
- Establish nutrient removing wetlands along drainage paths
- Implement sediment control structures

The SAWPA IWRP includes more descriptions of 2010 projects aimed at meeting the LESJWA goals.



### Stormwater Quality Standards Study

The Orange County, Riverside County and San Bernardino County and other interested agencies have discussed forming a group to work with the Santa Ana RWQCB in conducting additional evaluations of stormwater quality standards. Under the Triennial Review List, a specific item was listed that proposes to consider Water Code Section 13241 factors in relation to compliance with water quality objectives during wet weather (especially costs and need for housing). Orange County representatives indicated that during consideration of reissuance of the areawide stormwater NPDES permit for those parts of Orange County within the Santa Ana Region, the co-permittees expressed concern about their ability to comply, and the costs of compliance, with established water quality objectives during wet weather. The co-permittees expressed interest in working with the RWQCB in validating that the factors cited in Section 13241 of the California Water Code, especially costs and the need for housing in the area had been taken into account in establishing the objectives. After further discussions of the common issue between all three counties in the Santa Ana River watershed, it was decided by all that this evaluation should be made on a watershed wide basis. Based on a strong watershed-wide support for this item, this item was moved to number four in priority on their Triennial Review List and the RWQCB will be devoting one-half person-year to this effort.

In subsequent meetings, discussion focused on the development of a request for proposals for a workplan to conduct the study. Interests were expressed in a regional agency that was not a co-permittee to serve as the study administrator. Consequently, SAWPA was approached about serving as the administrator for a new task force to conduct the study. In October 2002, SAWPA Board indicated their support for SAWPA to serve as the task force administrator.

### RWQCB TMDL Development and Monitoring

The Regional Water Quality Control Board is conducting intensive water quality monitoring to provide data to develop new Total Maximum Daily Loads (TMDLs) in both the Chino Basin and the San Jacinto Watershed. SAWPA is serving as the neutral facilitator and administrator for the RWQCB in coordinating TMDL workgroups.

This San Jacinto TMDL work will provide development of the nutrient TMDL project for Lake Elsinore and Canyon Lake, the pathogen TMDL for Canyon Lake, and the toxics TMDL for Lake Elsinore. The project would provide an understanding of the sources of nutrients for both lakes, pathogens for Canyon Lake, and toxics for Lake Elsinore. As a result, the project would provide the information necessary to help restore the water quality in both lakes.

In Chino Basin, new TMDLs are being developed through intensive monitoring of pathogens to protect downstream beneficial uses. New TMDLs are scheduled to be incorporated into the RWQCB's basin plan over the next year.



### **San Jacinto Watershed Management Plan**

LESJWA, in conjunction with a just formed nonprofit organization called the San Jacinto Watershed Council, is conducting a watershed management plan to develop implementation strategies to control nutrients from the San Jacinto River Watershed that negatively impact downstream water bodies such as Canyon Lake and Lake Elsinore. The Plan is expected to be complete by December 2003.

### **U.S. Army Corps of Engineers Ecosystem Restoration Feasibility Study, Riverside and San Bernardino Counties**

A feasibility study is being considered to reduce damages from invasion of *Arundo donax* and other nonnative invasive species in the Santa Ana River. Opportunities will be investigated for ecosystem restoration, to improve surface water quality, reduce sedimentation and erosion control issues and provide recreational opportunities within the Santa Ana basin.

